

WHAT IS CLAIMED IS:

1. A method for a helping user equipment (UE) in a wireless communications network, the method comprising:
 - 5 transmitting an uplink signal to a first physical transmit point (TP) wherein the uplink signal is associated with a target UE that is engaged in device-to-device (D2D) communications with the helping UE, and the uplink signal is associated with a downlink re-activation criteria for waking the first physical TP.
 - 0 2. The method of claim 1, wherein the downlink re-activation criteria comprises at least one of an interference level experienced by the target UE, a request to provide wireless access, and a quality of a discovery signal of the uplink signal.
 3. The method of claim 2, wherein the uplink signal satisfies the downlink re-activation
5 criteria when the uplink signal indicates that the interference level experienced by the target UE exceeds a threshold.
 4. The method of claim 3, wherein the interference level experienced comprises a background interference level experienced by the target UE.
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 5. The method of claim 2, wherein the discovery signal is an uplink sounding signal and the uplink signal satisfies the downlink re-activation criteria when a received signal power of the uplink sounding signal exceeds a threshold.
 - 25 6. The method of claim 1, wherein the uplink signal causes the first physical TP to reactivate a downlink transmitter of the first physical TP when the uplink signal satisfies the downlink re-activation criteria.
 7. A helping user equipment (UE) comprising:
30 a processor; and
a computer readable storage medium storing programming for execution by the processor, the programming including instructions to:

transmit an uplink signal to a first physical transmit point (TP) wherein the uplink signal is associated with a target UE that is engaged in device-to-device (D2D) communications with the helping UE, and the uplink signal is associated with a downlink re-activation criteria for waking the first physical TP.

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8. The helping UE of claim 7, wherein the downlink re-activation criteria comprises at least one of an interference level experienced by the target UE, a request to provide wireless access, and a quality of a discovery signal of the uplink signal.

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9. The helping UE of claim 8, wherein the uplink signal satisfies the downlink re-activation criteria when the uplink signal indicates that the interference level experienced by the target UE exceeds a threshold.

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10. The helping UE of claim 9, wherein the interference level experienced comprises a background interference level experienced by the target UE.

11. The helping UE of claim 8, wherein the discovery signal is an uplink sounding signal and the uplink signal satisfies the downlink re-activation criteria when a received signal power of the uplink sounding signal exceeds a threshold.

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12. The helping UE of claim 7, wherein the uplink signal causes the first physical TP to reactivate a downlink transmitter of the first physical TP when the uplink signal satisfies the downlink re-activation criteria.

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13. A method for muting, the method comprising:

deactivating a downlink transmitter of a physical transmit point (TP) without deactivating the uplink receiver of the physical TP;

monitoring, by the physical TP, an uplink signal via the uplink receiver while the downlink transmitter of the physical TP is deactivated, wherein the uplink signal is

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communicated by a helping user equipment (UE) that is engaged in device-to-device (D2D) communications with a target UE; and

reactivating the downlink transmitter of the physical TP when the uplink signal satisfies a downlink re-activation criteria.

14. The method of claim 13, further comprising:

determining, by the physical TP, that a downlink transmission for the target UE has been offloaded from a second TP to the physical TP, wherein the physical TP and the second TP are associated with the same virtual TP; and

5 performing the downlink transmission to the target UE using the downlink transmitter.

15. The method of claim 13, wherein the uplink signal satisfies the downlink re-activation criteria when the uplink signal indicates that an interference level experienced by the target
0 UE exceeds a threshold.

16. The method of claim 15, wherein the interference level experienced by the target UE comprises a background interference level experienced by the target UE.

17. A physical transmit point (TP) comprising:

5 a processor; and

a computer readable storage medium storing programming for execution by the processor, the programming including instructions to:

deactivate a downlink transmitter of a physical transmit point (TP) without deactivating the uplink receiver of the physical TP;

10 monitor an uplink signal via the uplink receiver while the downlink transmitter of the physical TP is deactivated, wherein the uplink signal is communicated by a helping user equipment (UE) that is engaged in device-to-device (D2D) communications with a target UE; and

25 reactivate the downlink transmitter of the physical TP when the uplink feedback signal satisfies a downlink re-activation criteria.

18. The physical TP of claim 17, wherein the programming further includes instructions to:

30 determine that a downlink transmission for the target UE has been offloaded from a second TP to the physical TP, wherein the physical TP and the second TP are associated with the same virtual TP; and

perform the downlink transmission to the target UE using the downlink transmitter.

19. The physical TP of claim 17, wherein the uplink signal satisfies the downlink re-activation criteria when the uplink signal indicates that an interference level experienced by the target UE exceeds a threshold.

5 20. The physical TP of claim 19, wherein the interference level experienced by the target UE comprises a background interference level experienced by the target UE.